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Version 1.0A

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard

Describes features of the motherboard.

Go to ⇨ page 1

Chapter 2

Installing the Motherboard

Describes installation of motherboard components.

Go to ⇨ page 7

Chapter 3

Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ⇨ page 21

Chapter 4

Using the Motherboard Software

Describes the motherboard software.

Go to ⇨ page 37

Chapter 5

Trouble Shooting

Provides basic trouble shooting tips

Go to ⇨ page 41

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the TIGD-CI4 motherboard. This motherboard is a high performance, enhanced function motherboard with onboard Intel® Atom D425 single-core CPU (13W) for high-end business or personal desktop markets.

This motherboard is based on Intel® NM10 Chipset for best desktop platform solution. NM10 is a single-chip, highly integrated, high performance Hyper-Threading peripheral controller, unmatched by any other single chip-device controller. The memory controller supports DDR3 memory SODIMM frequency of 800. It supports two DDR3 sockets with up to maximum memory of 4 GB.

Intel® NM10 chipset supports one PCI slot which is PCI v2.3 compliant. It implements an EHCI compliant interface that provides 480 Mb/s bandwidth for eight USB 2.0 ports (four USB ports and two USB 2.0 headers support additional four USB ports). Intel® NM10 integrates a Serial ATA host controller, supporting two SATA ports with maximum transfer rate up to 3.0 Gb/s each.

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, one VGA port, one optional LPT port, one COM port, four USB ports, one LAN port, and audio jacks for microphone, line-in and line-out.

Feature

Processor

- Onboard Intel® Atom D425 single-core CPU
- Supports “Hyper-Threading” technology CPU

“Hyper-Threading” technology enables the operating system into thinking it’s hooked up to two processors, allowing two threads to be run in parallel, both on separate “logical” processors within the same physical processor.

Chipset

The Intel® NM10 chipset is based on an innovative and scalable architecture with proven reliability and performance.

- Enhanced DMA Controller, interrupt controller, and time functions
- Compliant with PCI v2.3 specification
- Integrated SATA 3.0 Gb/s Host Controller
- Integrated USB 2.0 Host Controller

Memory

- Supports DDR3 800 SO-DIMM with single-channel architecture
- Accommodates two unbuffered DIMMs
- 2 x 204-pin DDR3 SODIMM sockets support up to 4 GB

Onboard LAN (optional)

The onboard LAN provides the following features:

• Supports PCI Express™ 1.1 • Integrated 10/100 transceiver • Wake-on-LAN and remote wake-up support
• Supports PCI Express™ 1.1 • Integrated 10/100/1000 transceiver • Wake-on-LAN and remote wake-up support

Audio

This motherboard may support either of the following Audio chipsets:

- 5.1 Channel High Definition Audio Codec
- ADCs support 44.1k/48k/96kHz sample rate
- Meets Microsoft WLP 3.10 Vista premium and mobile PCs audio requirements
- Direct Sound 3D™ compatible

Expansion Options

The motherboard comes with the following expansion options:

- One 32-bit PCI v2.3 compliant slot
- Two 7-pin SATA connectors

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One optional parallel port
- One serial port
- One VGA port
- Four USB ports
- One LAN port
- Audio jacks for microphone, line-in and line-out

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

1.Some hardware specifications and software items are subject to change without prior notice.

2.Due to chipset limitation, we recommend that motherboard be operated in the ambiance between 0 and 50° C.

Specifications

CPU	• Onboard Intel® single-Core Atom D425 processor • DMI 667Mb/s
Chipset	• Intel® NM10 Express
Memory	• Single-channel DDR3 memory architecture • 2 x 204-pin DDR3 SODIMM socket support up to 4 GB • Supports DDR3 800 DDR3 SDRAM
Expansion Slots	• 1 x PCI slot
Storage	• 2 x Serial ATAII devices
Audio	• ALC662 5.1ch High Definition audio
LAN	• Realtek 8105E-VL 10/100 LAN (RTL8111E-VL Gigabit Lan optional)
Rear Panel I/O	• 1 x PS/2 keyboard & PS/2 mouse connectors • 4 x USB ports • 1 x optional parallel port • 1 x VGA port • 1 x COM port • 1 x RJ 45 LAN connector • 1 x Audio port
Internal I/O Connectors & Headers	• 1 x 24-pin ATX Power Supply connector & 4-pin 12V connector • 2 x Serial ATA connectors • 2 x USB 2.0 headers support additional 4 USB ports • 1 x Clear CMOS header • 1 x Front panel header • 1 x Front panel audio header • CPUFAN/SYSFAN connectors
System BIOS	• AMI BIOS with 8Mb SPI ROM • Supports Plug and Play, STR/STD, Hardware monitor, PCI interrupt selection, ACPI & DMI
Form Factor	• Mini-ITX Size, 170mm x 170mm

Motherboard Components

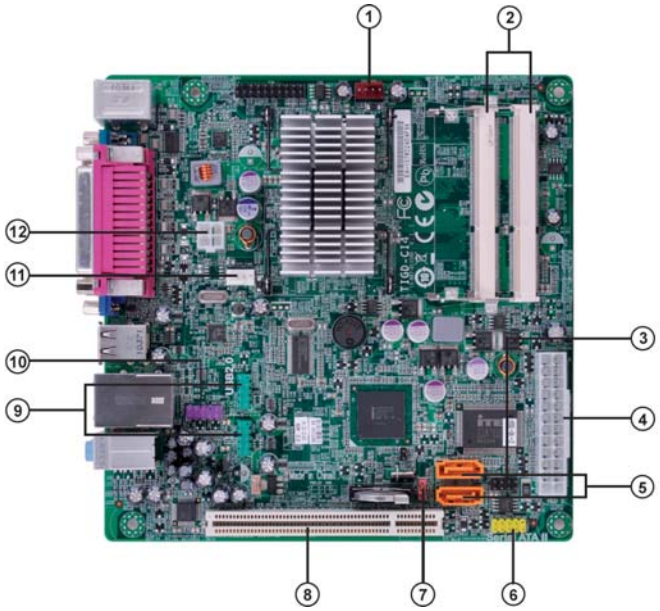


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU_FAN	CPU cooling fan connector
2. DDR3_1~2	204-pin DDR3 SODIMM slots
3. SPI_DEBUG	SPI_DEBUG header(only use for factory)
4. ATX_POWER	Standard 24-pin ATX power connector
5. SATA1~2	Serial ATA connectors
6. F_PANEL	Front panel switch/LED header
7. CLR_CMOS	Clear CMOS jumper
8. PCI1	32-bit add-on card slot
9. USB3~4	Front panel USB headers
10. F_AUDIO	Front panel audio header
11. SYS_FAN1	System cooling fan connector
12. ATX12V	4-pin +12V power connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Memo

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. First, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, this motherboard supports two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

This motherboard carries a Micro ATX form factor of 170 x 170 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.

Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

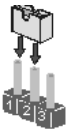
Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

SHORT

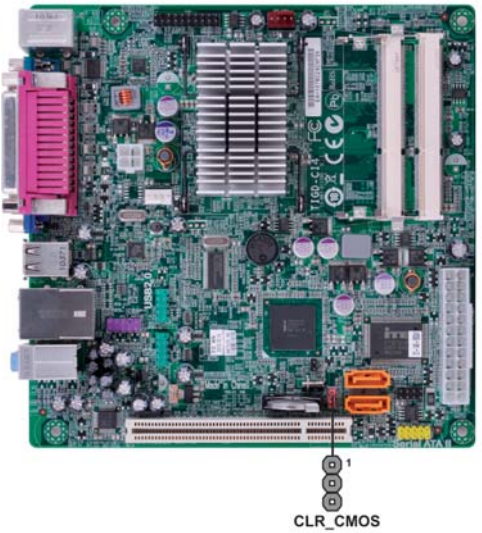
OPEN

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.



Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	Clear CMOS	1-2: NORMAL 2-3: CLEAR Before clearing the CMOS, make sure to turn off the system.	**CLR_CMOS**

1. To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save and Exit Setup".

2. Make sure the power supply provides enough 5VSB voltage before selecting the 5VSB function.

Installing Hardware

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 204-pin DDR3 SODIMM. The total memory capacity is 4 GB.

DDR3 SDRAM memory module table

Memory module	Memory Bus
DDR3 800	*400 MHz*

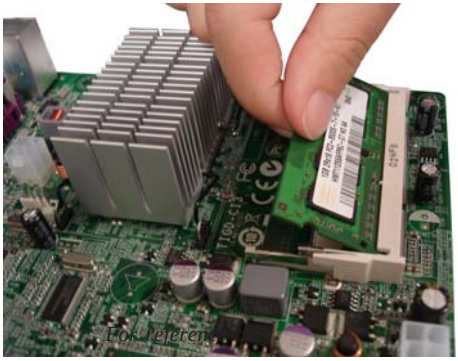
You must install at least one module in any of the two slots. The total memory capacity is up to 4 GB.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1. This motherboard supports unbuffered DDR3 SODIMM .
2. Push the latches on each side of the DIMM slot down.
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
6. Install any remaining DIMM modules.



Expansion Slots

Installing Add-on Cards

The slot on this motherboard is designed to hold expansion card and connect it to the system bus. Expansion slot is a mean of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.

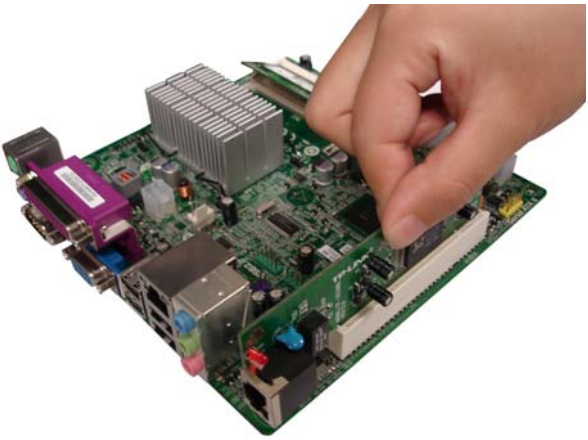
PCI Slot

This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board is PCI v2.3 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1. Remove a blanking plate from the system case corresponding to the slot you are going to use.
2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3. Secure the metal bracket of the card to the system case with a screw.

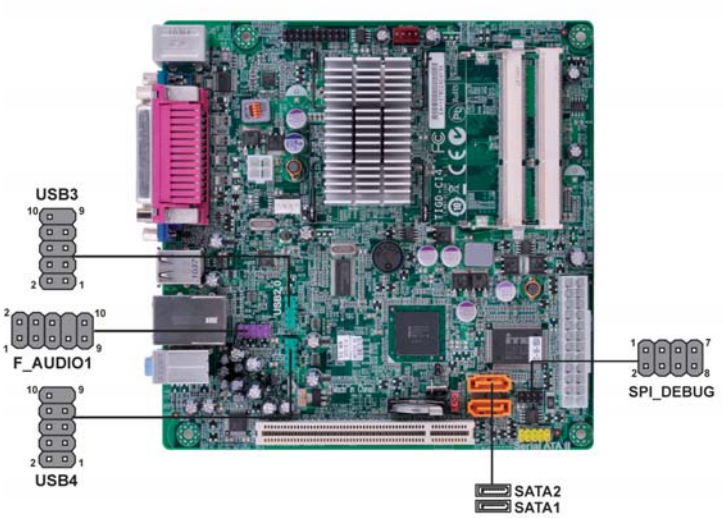


1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



SATA1~2: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

F_AUDIO1: Front Panel Audio header for Azalia

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE_SEND
7	AUD_GND	8	KEY
9	PORT 2L	10	SENSE_SEND

F_USB1~2: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	GND

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive

This section describes how to install SATA connector

About SATA Connectors

Your motherboard features two SATA connectors supporting a total of two drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

SATA power cable (optional)

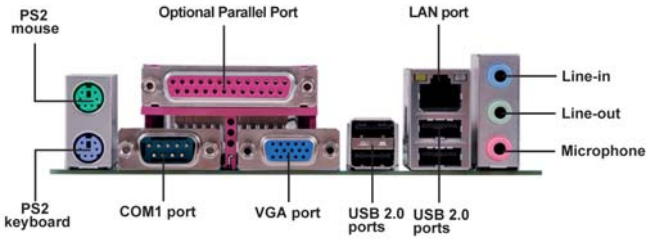
Refer to the illustration below for proper installation:

1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard does not support the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



PS2 Mouse — Use the upper PS/2 port to connect a PS/2 pointing device.

PS2 Keyboard — Use the lower PS/2 port to connect a PS/2 keyboard.

Parallel Port (LPT) (optional) — Use LPT to connect printers or other parallel communica tions devices.

COM1 Port — Use the COM port to connect serial devices such as mice or fax/modems.

VGA Port — Connect your monitor to the VGA port.

LAN Port — Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

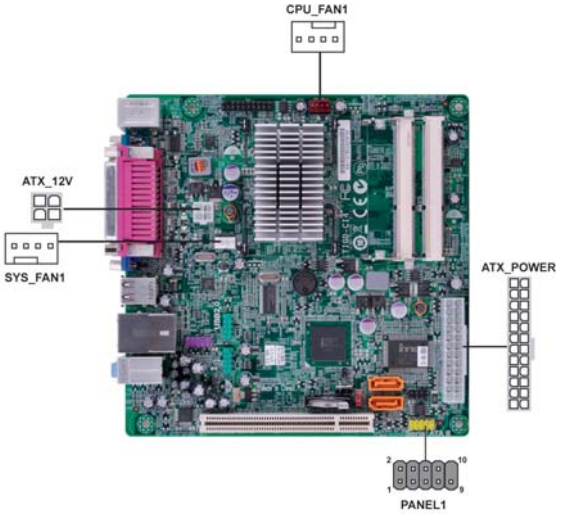
USB Ports — Use the USB ports to connect USB devices.

Audio Ports — Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone.

Connecting Case Components

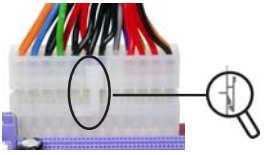
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1. Connect the CPU cooling fan cable to **CPU_FAN**.
2. Connect the standard power supply connector to **ATX_POWER**.
3. Connect the case switches and indicator LEDs to the **F_PANEL**.
4. Connect the system cooling fan connector to **SYS_FAN1**.
5. Connect the auxiliary case power supply connector to **ATX12V**.



Connecting 24-pin power cable

The ATX_POWER 24-pin connector allows you to connect to ATX v2.x power supply.

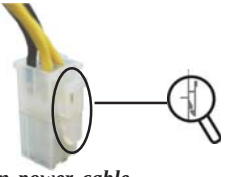


24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX_POWER match perfectly.

Connecting 4-pin power cable

The ATX12V power connector is used to provide power to the CPU.



4-pin power cable

When installing 4-pin power cable, the latches of power cable and the ATX12V match perfectly.

CPU_FAN: CPU Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	PWM

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

ATX_POWER: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

SYS_FAN: System Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	Control	Control

ATX12V: ATX 12V Power Connector

Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or micro-ATX cases. Refer to the table below for information:

F_PANEL

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

***** *MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Memo

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

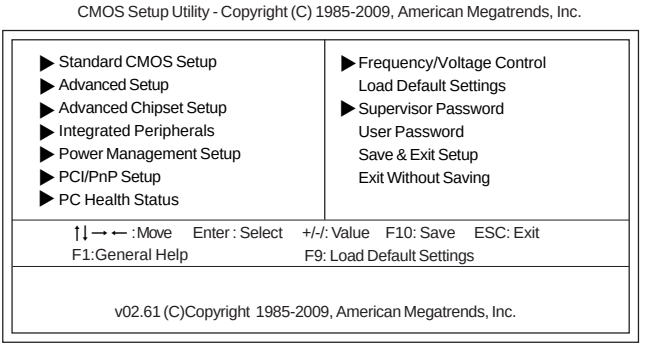
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

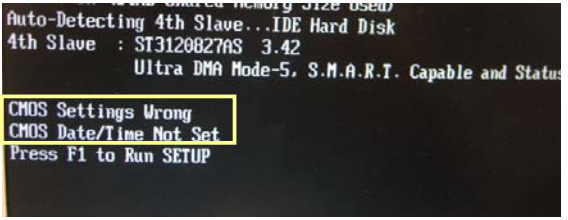
Press the delete key to access the BIOS Setup Utility.

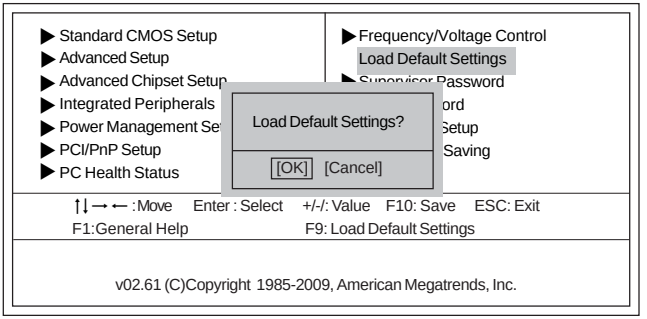

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
▶ Standard CMOS Setup
▶ Advanced Setup
▶ Advanced Chipset Setup
▶ Integrated Peripherals
▶ Power Management Setup
▶ PCI/PnP Setup
▶ PC Health Status
▶ Frequency/Voltage Control
Load Default Settings
▶ Supervisor Password
User Password
Save & Exit Setup
Exit Without Saving
↑↓→←:Move Enter: Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Load Default Settings
v02.61 (C)Copyright 1985-2009, American Megatrends, Inc.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.


Auto-Detecting 4th Slave...IDE Hard Disk
4th Slave : ST3120827AS 3.42
Ultra DMA Mode-5, S.M.A.R.T. Capable and Status
CMOS Settings Wrong
CMOS Date/Time Not Set
Press F1 to Run SETUP



Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

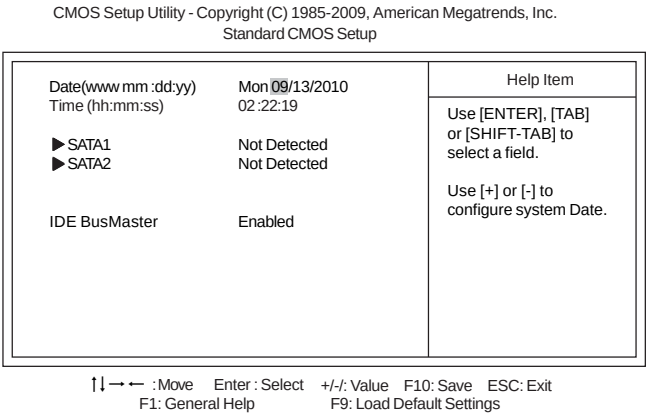
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-/	Modifies the selected field's values
Enter	Select
F9	Loads an optimized setting for better performance
F1	Displays a screen that describes all key functions

For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

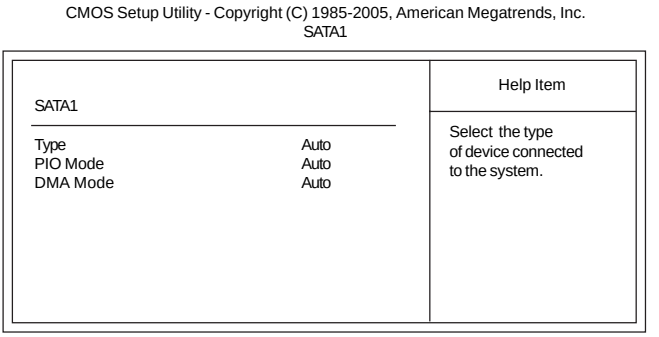

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Standard CMOS Setup
Date(www mm :dd:yy) Mon 09/13/2010
Time (hh:mm:ss) 02 :22:19
▶SATA1 Not Detected
▶SATA2 Not Detected
IDE BusMaster Enabled
Help Item
Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

▶ SATA1~2

This motherboard supports two SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
SATA1
SATA1
Type Auto
PIO Mode Auto
DMA Mode Auto
Help Item
Select the type of device connected to the system.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Type (Auto)

Use this item to configure the type of the IDE device that you specify. If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode (Auto)

DMA capability allows user to improve the transfer-speed and data-integrity for compatible IDE devices.

Press <Esc> to return to the Standard CMOS Setup page.

IDE BusMaster (Enabled)

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Advanced Setup

		Help Item
Intel XD Bit	Disabled	When disabled, force the XD feature flag to always return 0.
TM Status	TM1	
Limit CPUID MaxVal	Disabled	
Intel (R) HT Technology	Enabled	
CPU Host Clock	200MHz	
Quick Power on Self Test	Enabled	
Quiet Boot	Enabled	
Boot Up Numlock Status	On	
APIC Mode	Enabled	
1st Boot Device	Hard Disk Drive	
2nd Boot Device	CD/DVD	
3rd Boot Device	1st FLOPPY DRIVE	
▶Hard Disk Drives	Press Enter	
▶ Removable Drives	Press Enter	
▶CD/DVD Drivers	Press Enter	
Boot Other Device	Yes	
ECS eJIFFY Function	Disabled	

↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Intel XD Bit (Disabled)

This item allows users to enable or disable the Intel XD bit.

TM Status (TM1)

This item shows TM function status if CPU can support TM function.

Limit CPUID MaxVal (Disabled)

Use this item to enable or disable the Max CPU ID value limit. When supports Prescott and LGA775 CPUs, enables this to prevent the system from “rebooting” when trying to install Windows NT 4.0.

Intel (R) HT Technology (Enabled)

This item enables or disables Intel HT Technology support.

CPU Host Clock (200MHz)

Enables or disables the control of CPU host clock. Enabled will allow the CPU Host Frequencyitem below to be configurable.

Note: If your system fails to boot after overclocking, please wait for20 seconds to allow for automated system reboot, or clear the CMOS values to reset the board todefault values.

Quick Power on Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Quiet Boot (Enabled)

If enabled, BIOS will show a full screen logo at boot; if disabled, BIOS will set theinitialdisplay mode to BIOS and show the diagnostic POST screen at boot.

Boot Up Numlock Status (On)

This item defines if the keyboard Num Lock key is active when your system is started.

APIC Mode (Enabled)

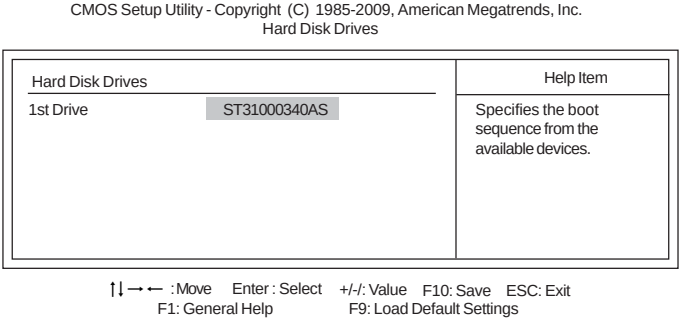
This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (Hard Disk Drive/CD/DVD/1st FLOPPY DRIVE.)

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

►Hard Disk Drives (Press Enter)

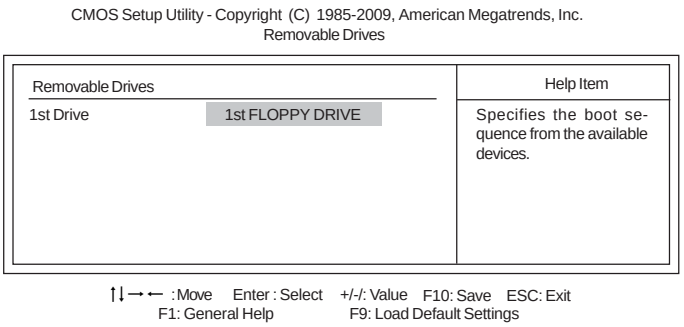
Scroll to this item and press <Enter> to view the following screen:



Press <Esc> to return to the Advanced Setup page.

▶Removable Drives (Press Enter)

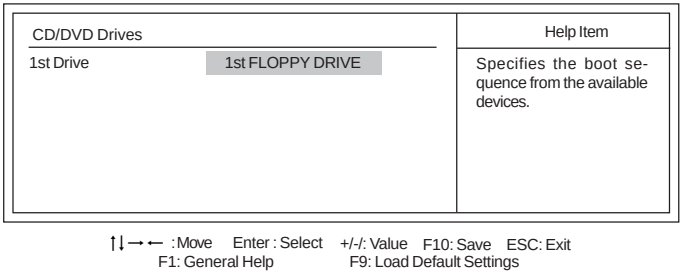
Scroll to this item and press <Enter> to view the following screen:


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Removable Drives
Removable Drives
1st Drive
1st FLOPPY DRIVE
Help Item
Specifies the boot sequence from the available devices.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Press <Esc> to return to the Advanced Setup page.

▶CD/DVD Drives (Press Enter)

Scroll to this item and press <Enter> to view the following screen:


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
CD/DVD Drives
CD/DVD Drives
1st Drive
1st FLOPPY DRIVE
Help Item
Specifies the boot sequence from the available devices.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Press <Esc> to return to the Advanced Setup page.

Boot Other Device (Yes)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

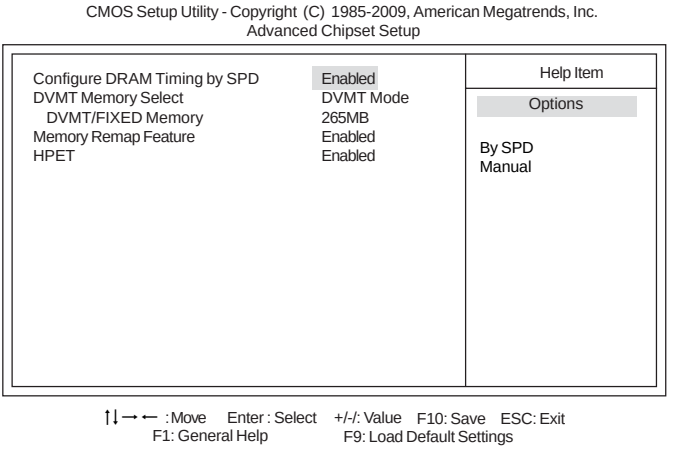
ECS eJIFFY Function (Disabled)

Use this item to enable or disable the ECS eJIFFY Function. eJIFFY is ECS unique software program for the quick access to the internet without entering O.S. Please refer to eJIFFY Users' Guide in the bundled DVD to know more about eJIFFY.

Press <Esc> to return to the main menu setting page.

Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



Configure DRAM Timing by SPD (Enabled)

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.

DVMT Mode Select (DVMT Mode)

This item allows you to select the DVMT operating mode.

DVMT/FIXED Memory (256MB)

When set to Fixed Mode, the graphics driver will reserve a fixed portion of thesystem memory as graphics memory, according to system and graphics requirements.

Memory Remap Feature (Enabled)

This item allows you to remap the overlapped PCI memory above the total physical memory if you have a 64 bit OS and 8 GB of RAM.

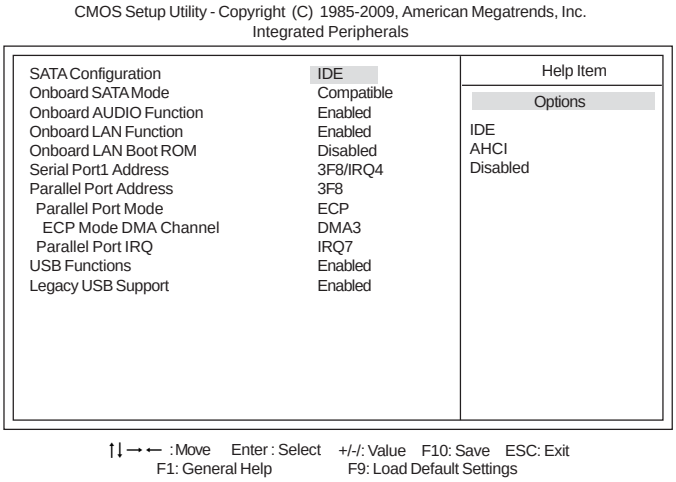
HPET (Enabled)

This item enables or disables HPET (High Precision Event Timer) support.

Press <Esc> to return to the main menu setting page.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Integrated Peripherals
SATA Configuration IDE
Onboard SATA Mode Compatible
Onboard AUDIO Function Enabled
Onboard LAN Function Enabled
Onboard LAN Boot ROM Disabled
Serial Port1 Address 3F8/IRQ4
Parallel Port Address 3F8
Parallel Port Mode ECP
ECP Mode DMA Channel DMA3
Parallel Port IRQ IRQ7
USB Functions Enabled
Legacy USB Support Enabled
Help Item
Options
IDE
AHCI
Disabled
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

SATA Configuration (IDE)

Use this item to show the Serial ATA Configuration options: IDE,AHCI,Disabled.

Onboard SATA Mode (Compatibe)

Use this item to set SATA mode (not disable)

Onboard AUDIO Function (Enabled)

Use this item to enable or disable the onboard audio device.

Onboard LAN Function (Enabled)

Use this item to enable or disable the onboard LAN function.

Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

Serial Port1 Address (3F8/IRQ4)

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

Parallel Port Address (378)

Use this item to enable or disable the onboard Parallel port, and to assign a portaddress.

Parallel Port Mode (ECP)

Use this item to select the parallel port mode. You can select Normal (StandardParallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), orBPP (Bi-Directional Parallel Port).

ECP Mode DMA Channel (DMA3)

Use this item to assign a DMA channel to the parallel port.

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

USB Functions (Enabled)

Use this item to enable or disable the USB function.

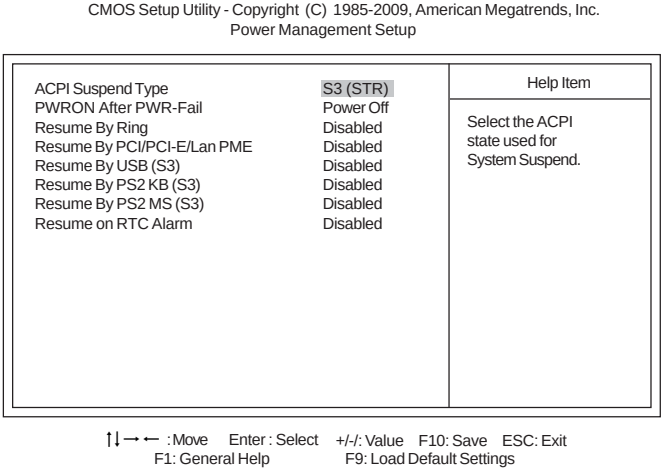
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the main menu setting page.

Power Management Setup

This page sets up some parameters for system power management operation.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Power Management Setup
ACPI Suspend Type S3 (STR)
PWRON After PWR-Fail Power Off
Resume By Ring Disabled
Resume By PCI/PCI-E/Lan PME Disabled
Resume By USB (S3) Disabled
Resume By PS2 KB (S3) Disabled
Resume By PS2 MS (S3) Disabled
Resume on RTC Alarm Disabled
Help Item
Select the ACPI state used for System Suspend.
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

ACPI Suspend Type (S3(STR))

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

PWRON After PWR-Fail (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Resume By RING (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume By PCI/PCI-E/Lan PME (Disabled)

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Resume By USB (S3) (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3/S4 mode.

Resume By PS2 KB (S3) (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

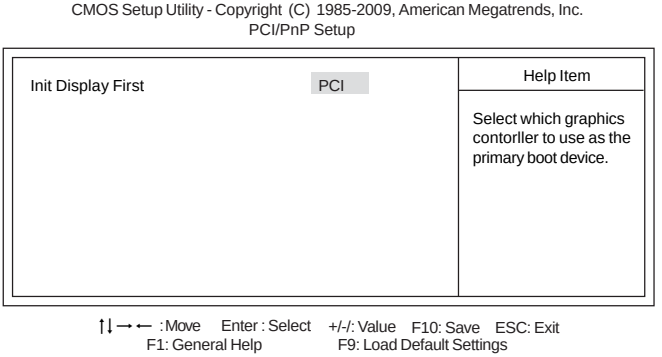
Resume on RTC Alarm (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Press <Esc> to return to the main menu setting page.

PCI/PnP Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.



Init Display First (PCI)

Use this item to select which graphics controller to use as the primary boot devices.

Note: If you want this item work, please follow the steps below:

A. Insert ECS drivers DVD to run Auto setup or browse the DVD to install Intel chipset drivers, VGA and sound drivers.

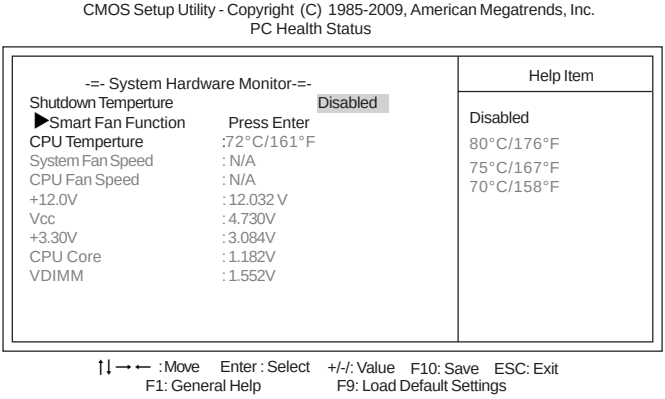
B. Install display card drivers.

C. Start computer to Windows interface, you can find Dual Monitor Support.

Press <Esc> to return to the main menu setting page.

PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.

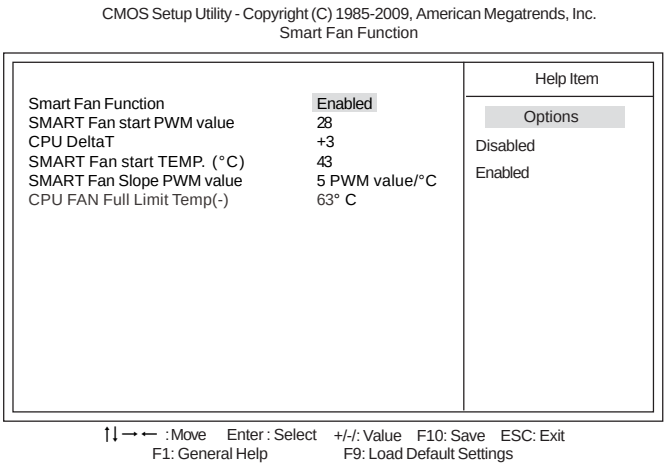

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
PC Health Status
-=- System Hardware Monitor-=-
Shutdown Temperture Disabled
▶Smart Fan Function Press Enter
CPU Temperture :72°C/161°F
System Fan Speed : N/A
CPU Fan Speed : N/A
+12.0V : 12.032 V
Vcc : 4.730V
+3.30V : 3.084V
CPU Core : 1.182V
VDIMM : 1.552V
Help Item
Disabled
80°C/176°F
75°C/167°F
70°C/158°F
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Shutdown Temperature (Disabled)

Enable you to set the maximum temperature the system can reach before powering down.

▶Smart Fan Function (Press Enter)

Scroll to this item and press <Enter> to view the following screen:


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Smart Fan Function
Smart Fan Function Enabled
SMART Fan start PWM value 28
CPU DeltaT +3
SMART Fan start TEMP. (°C) 43
SMART Fan Slope PWM value 5 PWM value/°C
CPU FAN Full Limit Temp(-) 63° C
Help Item
Options
Disabled
Enabled
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

SMART Fan Function (Enabled)

This item allows you to enable/disable the control of the CPU fan speed by changing the fan voltage.

Press <Esc> to return to the Smart Fan Function page.

SMART Fan start PWM value (28)

This item is used to set the start PWM value of the CPU smart fan.

CPU DeltaT (+3)

This item specifies the range that controls CPU temperature and keeps it fromgoing so high or so low when smart fan works.

SMART Fan start TEMP. (°C) (43)

This item is used to set the start temperature of the smart fan.

SMART Fan Slope PWM value (5 PWM value/°C)

This item is used to set the Slope Select PWM of the smart fan.

CPU FAN Full Limit Temp (-) (63°C)

This item is used to set the limit temperature of the smart fan.

Press <Esc> to return to the PC Health Status page.

System Component Characteristics

These items display the monitoring of the overall inboard hardware health events, such as CPU temperature, CPU fan speed, System Fan Temperture...etc.

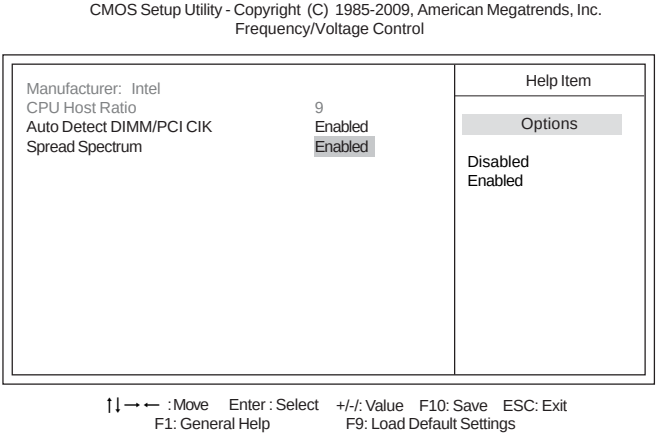
CPU Temperature
System Fan Speed
CPU Fan Speed

- CPU Vcore
- VDIMM

Press <Esc> to return to the main menu setting page.

Frequency/Voltage Control

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Frequency/Voltage Control
Manufacturer: Intel
CPU Host Ratio 9
Auto Detect DIMM/PCI CIK Enabled
Spread Spectrum Enabled
Help Item
Options
Disabled
Enabled
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Manufacturer: Intel

This item displays the information of current manufacturer of the CPU installed in your computer.

CPU Host Ratio:9

This item shows ratio of the CPU Host installed in your system.

Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

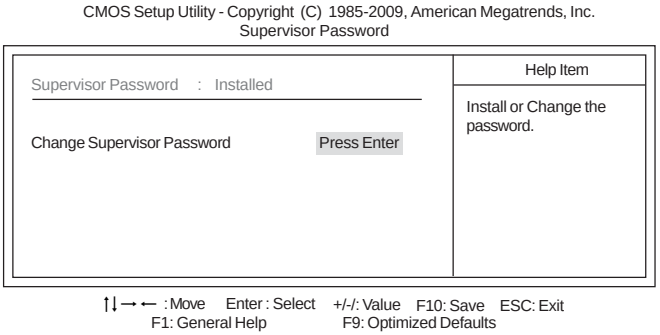
Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box that lets you install stability-oriented defaults for all appropriate items in the Setup Utility. Select <OK> and then press <Enter> to install the defaults. Select <Cancel> and then press <Enter> to not install the defaults.

Supervisor Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Supervisor Password
Supervisor Password : Installed
Change Supervisor Password
Press Enter
Help Item
Install or Change the password.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help
F9: Optimized Defaults

Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

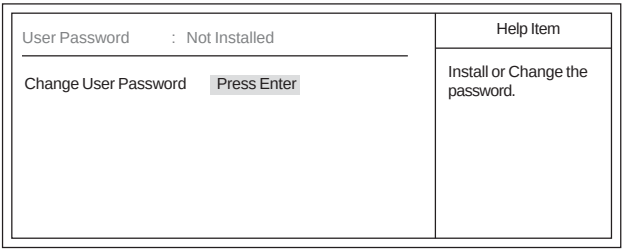
Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

User Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
User Password
User Password : Not Installed
Change User Password
Press Enter
Help Item
Install or Change the password.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help
F9: Optimized Defaults

User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change User Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the user password.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

*If you have made settings that you do not want to save, use the "*Exit Without Saving*" item and select [OK] to discard any changes you have made.*

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4
Using the Motherboard Software

About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.

1. *Never try to install all software from folder that is not specified for use with your motherboard.*
2. *The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver disk. Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.*

Auto-installing under Windows Vista/7

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disc loads automatically under Windows Vista/7. When you insert the DVD-ROM/CD-ROM disk in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.

If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Drivers Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk. Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows Vista/7. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **Exit** button closes the Auto Setup window.

Utilities Tab

Lists the software utilities that are available on the disk.

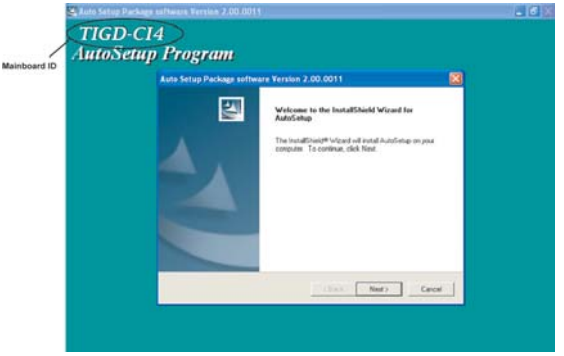
Information Tab

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

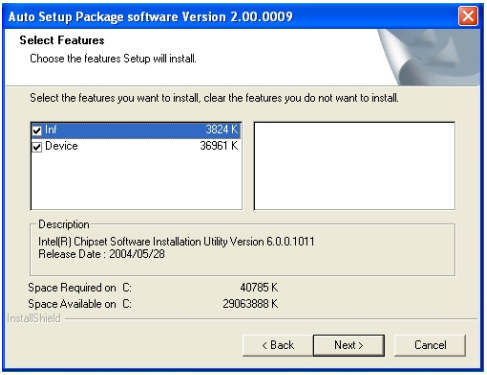
1. *Click **Setup**. The installation program begins:*



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

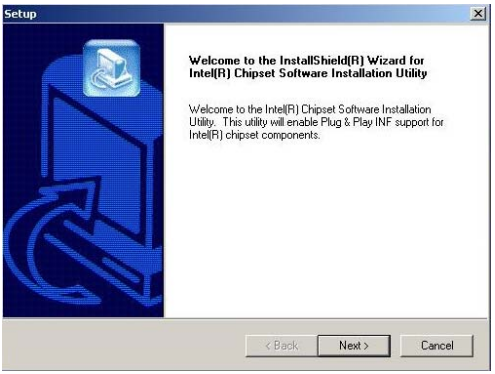
The motherboard identification is located in the upper left-hand corner.

2. *Click **Next.** The following screen appears:*


Auto Setup Package software Version 2.00.0009
Select Features
Choose the features Setup will install.
Select the features you want to install, clear the features you do not want to install.
Inf 3824 K
Device 36961 K
Description
Intel(R) Chipset Software Installation Utility Version 6.0.0.1011
Release Date : 2004/05/28
Space Required on C: 40785 K
Space Available on C: 29063888 K
InstallShield
< Back
Next >
Cancel

3. *Check the box next to the items you want to install. The default options are recommended.*

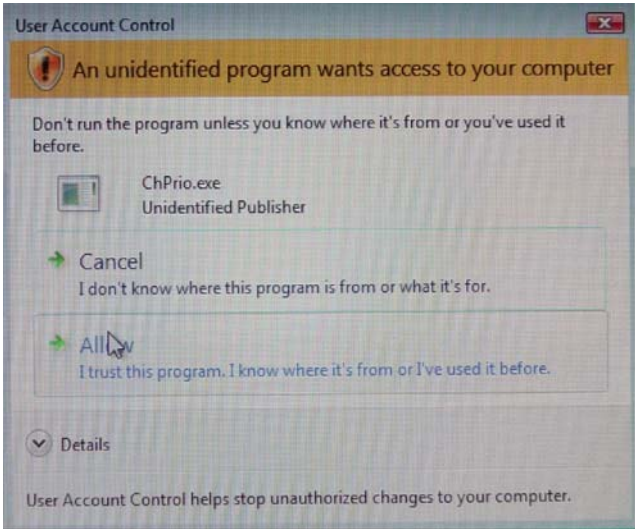
4. *Click **Next** run the Installation Wizard. An item installation screen appears:*


Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

5. *Follow the instructions on the screen to install the items.*

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Windows Vista/7 will appear below UAC (User Account Control) message after the system restart. You must select "Allow" to install the next driver. Continue this process to complete the drivers installation.


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
ChPrio.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

This concludes Chapter 4.

Chapter 5
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1.Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.
2. Check the VGA adapter card (if applicable) is inserted properly.
3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps : memory not detected
   b. 1 long beep and 8 short beeps : VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.
2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

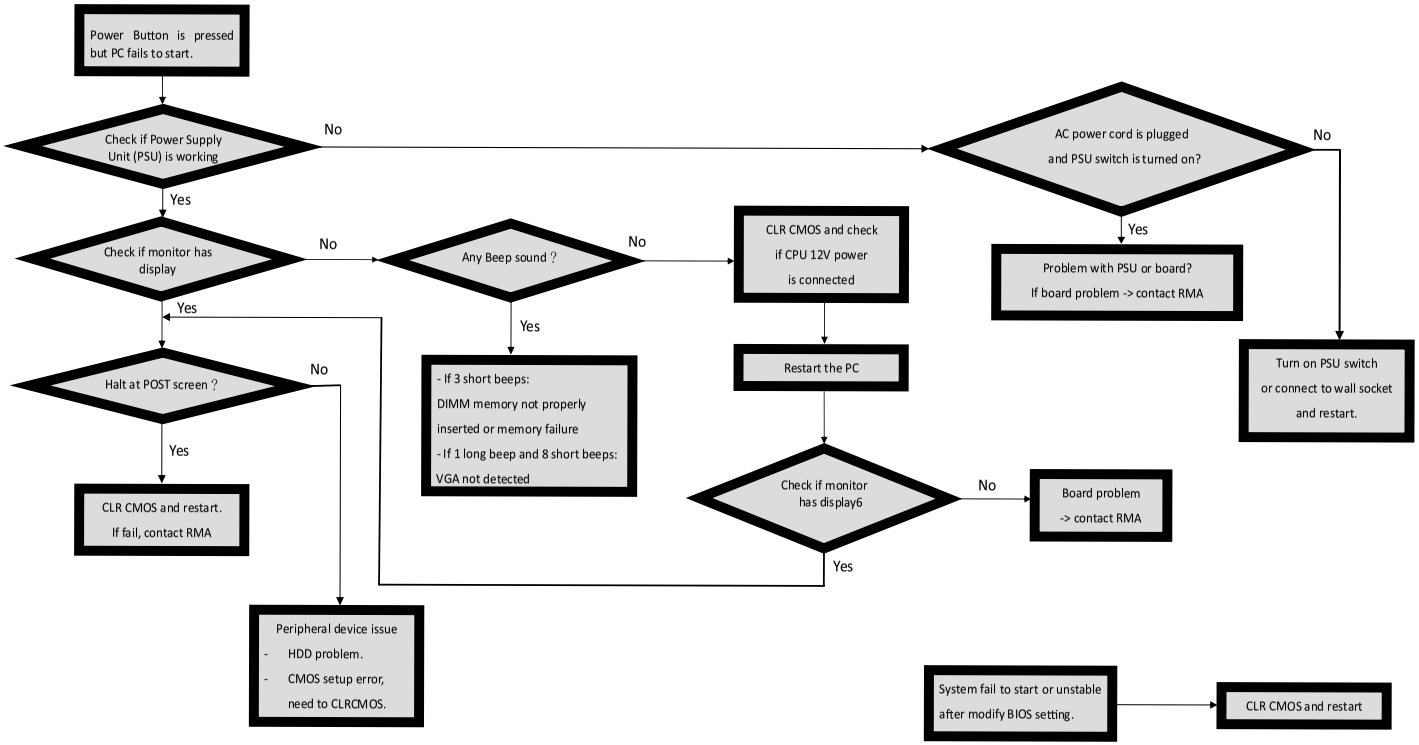
4. Remove the hard drive, optical drive or DDR memory to determine which of these component may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.
2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.
3. Routinely clean the CPU cooler fan to remove dust and hair.
4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.
5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its lifespan.
6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
Yes
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Check if monitor has display
No
Yes
Any Beep sound ?
No
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
CLR CMOS and check if CPU 12V power is connected
Restart the PC
Check if monitor has display6
No
Yes
Board problem -> contact RMA
Halt at POST screen ?
No
Yes
CLR CMOS and restart. If fail, contact RMA
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo